

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: 82302656.2

(51) Int. Cl.³: A 45 D 1/04

(22) Date of filing: 24.05.82

(30) Priority: 16.10.81 JP 164088/81

(43) Date of publication of application:
27.04.83 Bulletin 83/17

(84) Designated Contracting States:
DE FR GB

(71) Applicant: Takimae, Toyosaku
2-26, 2-chome Takanawa
Minato-ku Tokyo(JP)

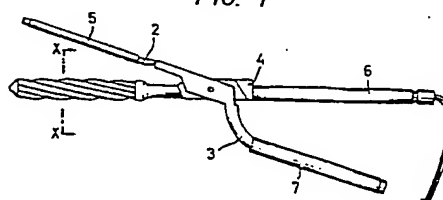
(72) Inventor: Takimae, Toyosaku
2-26, 2-chome Takanawa
Minato-ku Tokyo(JP)

(74) Representative: Ben-Nathan, Laurence Albert et al,
c/o MICHAEL BURNSIDE & PARTNERS 2 Serjeants' Inn
Fleet Street
London EC4Y 1HL(GB)

(54) Hair-arranging electric curling-iron.

(57) A hair-arranging electric curling-iron which is constructed in the form of scissors as a whole, one portion corresponding to a blade thereof comprising a rod with an electric heater accommodated therein, the other portion (2) corresponding to a blade thereof comprising a glove (5) for cooperation with said rod to press hair. An angle or edge adapted to wave hair is spirally provided on the surface of the rod to impart a natural wave to hair and decrease possible damage to the hair.

FIG. 1



HAIR-ARRANGING ELECTRIC CURLING-IRON

This invention relates to a hair-arranging electric curling-iron which can impart a natural stream to hair.

To wave hair, there has been heretofore proposed a method which comprises winding a part of hair required round a rod heated by electric heat and provided with an edge having a polygonal section and a number of protrusions, and applying heat to the hair while applying tension thereto to bend hair. This method has become widespread even to barber shops for men.

In the above-described conventional hair-arranging electric curling-iron, the polygonal edge or a number of protrusions extend in a direction of the center line of the heating rod, and in operation, the iron or said rod is positioned horizontally, round which is wound hair with the result that the obtained wave naturally extends in a horizontal direction, thus failing to obtain a natural and soft wave. In addition, hair is pressed and heated at a right angle to the length thereof between the protrusions of the rod and a glove for holding hair in the fashion of scissors corresponding thereto, as a result of which there poses a disadvantage that a local pain is severe.

This invention provides a hair-arranging electric iron which does not suffer from the disadvantage noted above by the provision of an arrangement wherein the edges or protrusions on the rod are inclined with respect to a center line of the rod so as to form a spiral configuration.

That is, if the edges or protrusions on the rod are spirally provided, the edges or protrusions are obliquely pressed against the length of hair and thus hair is not only curled within a plane including the length but is curled within a plane perpendicular to the length to form a spiral curl, thus producing an impression of a stream-like natural and soft wave.

In addition, since the protrusions are obliquely pressed against hair, a part subjected to heat and pressure becomes longer than in the case where the protrusions are pressed at a right angle thereby materially decreasing damage, such as cutting of the hair.

Fig. 1 is a side view of a preferred embodiment of a hair-arranging electric iron in accordance with the present invention;

Fig. 2 is an end view taken along line X - X of Fig. 2; and

3
Fig. 3 is an enlarged view of hair fiber.

Fig. 1 shows one embodiment of a hair-arranging iron in accordance with the present invention, in which one portion 1 corresponding to a blade of the iron formed into scissors as a whole, is called a rod which accommodates therein an electric heater device as is known. Reference numeral 2 designates a glove, and hair is held and pressed between the glove and the rod 1 by manipulating handles 3 and 4. In the iron according to the present invention, the concavity in the inner surface of the glove has a section of radius r which is slightly smaller than radius R of the rod and is covered with a rubber cover 5.

In the illustrated embodiment, the rod 1 is formed in a straight line fashion with respect to the handles, in which shape, when hair is wound round the rod, the rod 1 is readily stabilized in position. Thus, there decreases a failure wherein the hot rod 1 is erroneously pressed against the skin of a head. Both the handles 3 and 4 have rotatable holding tubes 6, 7 to facilitate winding of hair while rotating the iron within the palm.

The present invention is characterized in that as shown in Fig. 1, the polygonal edge or protrusion 8 formed on the surface of the rod 1 is not formed parallel to the

4

center line of the rod but is formed spirally. With this inclination, a wave formed by the iron in accordance with the present invention is not a wave in a horizontal direction but a natural and soft wave in which, depending on the direction of spiral of the rod, the wave flows to right if the spiral is wound rightwards whereas the wave flows to left if the spiral is wound leftwards.

Furthermore, since the edge or protrusion 8 of the rod 1 is pressed obliquely against the hair, damage to the hair such as burn-off at the pressing portion, is materially reduced as compared with prior art constructions in which the edge or the like is pressed at a right angle. This effect is particularly conspicuous in the case the edge or protrusion 8 if the rod is wound rightwards as shown as compared with the case in which it is wound leftwards. Hair fiber has a basic construction in which, as shown in Fig. 3, three keratins having a spiral construction are intertwined. If the protrusion 8 of the rod 1 is wound rightwards, the same winding as the spiral of the keratin is obtained and therefore the protrusion is considered to be pressed in the direction of length A of keratin. It is supposed that said right-winding decreases damage of hair fiber as compared with the left-winding rod in which the protrusion is pressed in the direction B at a right angle to the keratin spiral.

In addition, if the radius r of the concavity in

the inner surface of the glove is slightly smaller than the radius R of the rod 1, when hair is pressed by the rod 1 and glove 2, a space is formed in a central portion therebetween with the result that hair is evenly pressed in the inner surface of the glove and damage to the hair can be further decreased. However, if it is too small, both the side edges of the glove touch hair too hard, as a consequence of which the wave becomes unnatural.

In a case where the edge or protrusion 8 of the rod 1 extends in the direction of the center line of the rod, the specific edge or protrusion is opposed to the specific position of the glove. Thus, when the opposed condition between the rod and the glove is deviated due to the deviation in a mount portion in the form of scissors or the like, it is immediately shown up as a change in the pressing condition of hair. However, if the edge or protrusion 8 is spiral as in the iron of the present invention, a single edge or protrusion is to be pressed against the whole surface from right end to left end of the glove and thus, an influence resulting from the deviation of position of the rod and glove can be minimized as compared with prior art articles.

In the present invention, by the provision of a simple construction in which the edge or protrusion on the rod is provided obliquely and spirally with respect to the center line of the rod, it is possible to provide a natural

hair arrangement including a lateral wave that has been heretofore impossible, damage to the hair may be materially decreased, and hair arrangement is not influenced by the deviation of the iron. Thus, the present invention may offer extremely great effects as just mentioned.

7

CLAIMS

1. A hair-arranging electric curling-iron which is constructed in the form of scissors as a whole, one portion corresponding to a blade thereof comprising a rod with an electric heater accommodated therein, the other portion corresponding to a blade thereof comprising a glove for cooperation with said rod to press hair, said rod having its surface formed with a spiral polygonal edge or protrusion.

2. A hair-arranging electric curling-iron according to Claim 1, wherein the polygonal edge or protrusion on said rod is a spiral wound rightwards.

3. A hair-arranging electric curling-iron according to Claim 1 or Claim 2, wherein said rod and handles thereof are in a fashion of a straight line.

4. A hair-arranging electric curling-iron according to Claim 3, wherein both the handles have holding tubes rotatably mounted thereon.

FIG. 1

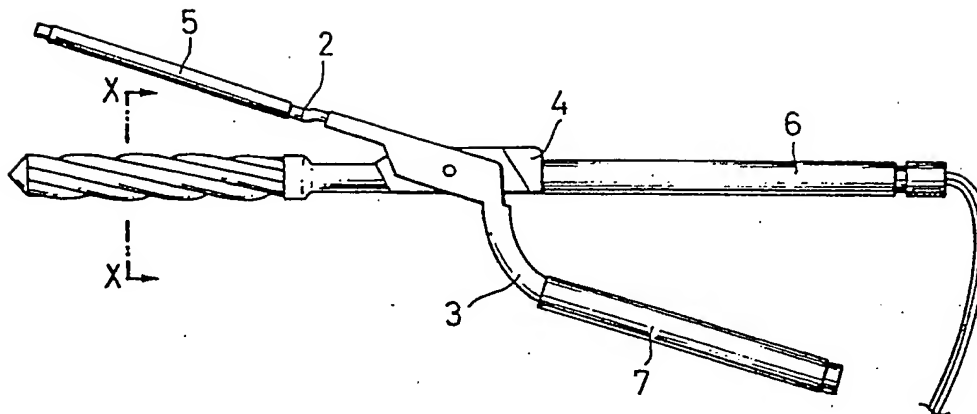


FIG. 3

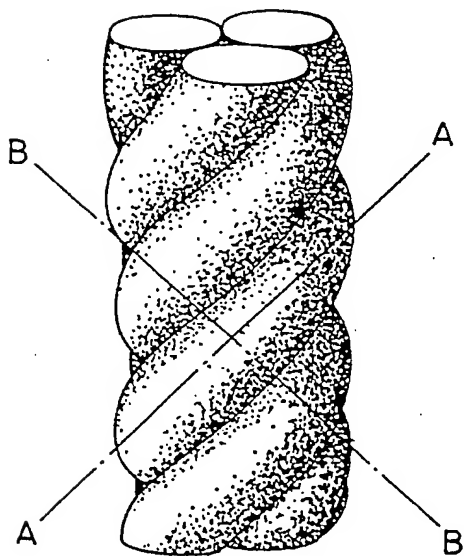
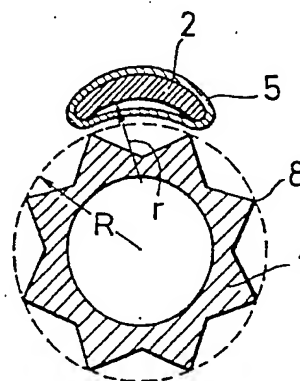


FIG. 2



**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.